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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,637	04/20/2005	Jun Yamashita	009270-0311834	4287

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EXAMINER

KOCA, HUSEYIN

ART UNIT	PAPER NUMBER
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3744

MAIL DATE	DELIVERY MODE
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10/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/509,637	Applicant(s) YAMASHITA ET AL.	
	Examiner Huseyin Koca	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/29/04 and 10/18/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities:

Claim 6 recite "...said temperature sensor is equal to a second predetermined value; and..." (line 19) should be changed to "...said temperature sensor is equal to a second predetermined value or less; and..."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makoto et al. (JP7035455) in view of Tomasov et al. (5,150,584), and further in view of Hiraoka et al. (5,970,727).

In regard to claim 6, Makoto et al. teach a refrigerator having refrigeration cycle including a compressor (23), (inherently) a condenser, (inherently) a drawing mechanism, (inherently) an evaporator, (inherently) an accumulator, and a cooling fan (25) for cooling the compressor (23) (Fig. 5; 0004, lines 1-4). Makoto et al. also teach a controller (30) and a temperature sensors 28 and 29 to measure the temperature of the compressor (0006, lines 1-4). Makoto et al. teach operating the fan (25) based on these temperature sensors to cool the compressor (23). Makoto et al. do not explicitly teach detecting the inlet and outlet temperature of the evaporator and determining low air temperature. Tomasov et al. teach operating the compressor based on the difference of evaporator inlet and outlet temperature (Abstract; C-1, L-49-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Makoto et al. system so that it measures the difference of the evaporator inlet and outlet temperature in order to advantageously understand the operation condition of the compressor and supply required amount of cooling to the compressor in order to prevent compressor being damaged. Moreover, Hiraoka et al. teach a relation between the compressor low air temperature and the evaporator temperature, and controls the compressor capacity based on these information (C-10, L-9-49). Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Makoto et al. to include the use of determining the low air temperature as taught by Hiraoka et al. in order to adjust the compressor and advantageously operate the compressor fan to cool the compressor to prevent the compressor being damaged.

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Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huseyin Koca whose telephone number is (571) 272-3048. The examiner can normally be reached on Monday - Friday 9:00AM to 4:00PM.

6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834 or Frantz Jules (571) 272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HK/


CHERYL TYLER
SUPERVISORY PATENT EXAMINER